Source: <u>Legal</u> > <u>Area of Law - By Topic</u> > <u>Patent Law</u> > <u>Patents</u> > <u>U.S. Patents</u> > <u>Utility Patents</u>

Terms: patno=5998786 (Edit Search)

009526 (00) 5998786 December 7, 1999

## UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT

### 5998786

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## Link to Claims Section

December 7, 1999

Apparatus for securing CCD board at a fixed position within a range of motion

**INVENTOR:** Movaghar, Abdolreza, San Diego, CA; del Rosario, Josephine, San Diego, CA; Diel, Mark, San Diego, CA; Schmeling, David J., San Diego, CA

**APPL-NO:** 009526 (00)

FILED-DATE: January 20, 1998

**GRANTED-DATE:** December 7, 1999

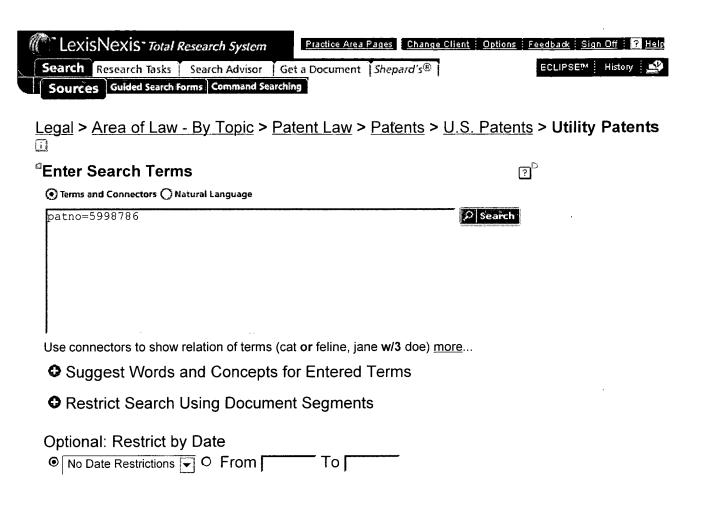
**ASSIGNEE-AT-ISSUE:** Hewlett-Packard Company, Palo Alto, CA

**ASSIGNEE-AFTER-ISSUE:** January 16, 2001 - MERGER (SEE DOCUMENT FOR DETAILS)., HEWLETT-PACKARD COMPANY INTELLECTUAL PROPERTY ADMINISTRATION P.O. BOX 272400 FORT COLLINS COLORADO 80527, Reel and Frame Number: 011523/0469

**LEGAL-REP:** Potts, Jerry R.

**PUB-TYPE:** December 7, 1999 - Utility Patent having no previously published pre-grant publication (A)

**PUB-COUNTRY:** United States (US)



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Query/Command : file pluspat

Selected file: PLUSPAT

Search statement 1

Query/Command : us5998786/pn

#### \*\* SS 1: Results 1

Search statement

#### Query/Command : prt fu legalall max

1 / 1 PLUSPAT - @QUESTEL-ORBIT - image

PN - US5998786 A 19991207 [US5998786]

PA - (A) HEWLETT PACKARD CO (US)

PAO - Hewlett-Packard Company, Palo Alto CA [US]

IN - (A) MOVAGHAR ABDOLREZA (US); DEL ROSARIO JOSEPHINE (US); DIEL

MARK (US); SCHMELING DAVID J (US)

AP - US952698 19980120 [1998US-0009526]

FD - Cont. of US701619 19960822 [1996US-0701619]

Continuation of: US5736738

PR - US952698 19980120 [1998US-0009526] US70161996 19960822 [1996US-0701619]

IC - (A) A47G-029/02 E04G-003/08 E06B-007/28

PCL - ORIGINAL (O): 250239000; CROSS-REFERENCE (X): 250234000

250504000R

DT - Basic

**CT** - US5367399; US5391009; US5463212; US5477047; US5736738

STG - (A) United States patent

AB -Apparatus for fixing the position of an optical sensor within a range of motion in relation to an optical apparatus. The fixing apparatus provides permits a range of motion through five degrees of freedom (DOF) during the securing process. The apparatus includes a housing for the optical assembly, a middle bracket, with the middle bracket secured to the optical apparatus. The range of motion is provided by a gimbal design in the housing and middle bracket which creates the five DOF. There are no screws involved in the fixing process to impart torques or forces to the parts being aligned and secured in position. An ultraviolet (UV) activated adhesive is used to secure the sensor housing to the middle bracket and the middle bracket to the optical scanner housing. The middle bracket is formed of a material transparent to UV light, and a high percentage of the UV light can pass through it to cure the adhesive applied between the parts. A vertical hole runs through tabs of both the housing and the middle bracket. The adhesive is applied into this region where it is constrained by the parts. The adhesive is a liquid during the alignment process which allows relative motion between the parts. When alignment is complete, the adhesive region is exposed to UV light which cures the adhesive into a solid vertical column, creating a form of chemical rivet. This chemical rivet provides a very strong

mechanical interlock of the components in addition to the adhesive bonding of the components.

1 / 1 CRXX - @CLAIMS/RRX

**AN** - 3251028

PN - 5,998,786 A 19991207 [US5998786]

PA - Hewlett-Packard Co
PT - E (Electrical)

ACT - 20010116 REASSIGNED

MERGER

Assignor: HEWLETT-PACKARD COMPANY DATE SIGNED: 05/20/1998

Assignee: HEWLETT-PACKARD COMPANY INTELLECTUAL PROPERTY

ADMINISTRATION P.O. BOX 272400 FORT COLLINS, COLORADO 80527-240

Reel 011523/Frame 0469

Contact: HEWLETT-PACKARD COMPANY VALERIE BAKES INTELLECTUAL PROPERTY ADMINISTRATION P.O. BOX 272400 FORT COLLINS, CO 80527-2400

UP - 2001-28 URAS- 2001-07-10

Query/Command : fam us5998786/pn

1 Patent Groups
\*\* SS 2: Results 6

Search statement 3

Query/Command : famstate nonstop

1 / 6 PLUSPAT - @QUESTEL-ORBIT

PN - CN1183569 A 19980603 [CN1183569]

**STG** - (A) Unexamined application

TI - (A) Apparatus for securing CCD board at fixed position within range of motion

PA - (A) HEWLETT PACKARD CO (US)

IN - (A) ROSARIO JOSEPHINE DEL (US); DIEL MARK (US); MOVAGHAR
ABDOLREZA (US)

IC - (A) G02B-027/32 G02B-027/62

PN2 - CN1092800 B 20021016 [CN1092800B]

STG2- (B) Patent

TI2 - (B) Equipment for securing CCD board at fixed position within range of motion

PA2 - (B) HEWLETT PACKARD CO (US)

IN2 - (B) ROSARIO J D (US); DIEL M (US); MOVAGHAR A (US)

IC2 - (B) G02B-027/32 G02B-027/62

**AP** - CN97117750 19970822 [1997CN-0117750] **PR** - US70161996 19960822 [1996US-0701619]

2 / 6 PLUSPAT - @QUESTEL-ORBIT

- PN DE69717362 D1 20030109 [DE69717362]
  STG (D1) Granted EP number in bulletin
  OTI (D1) Vorrichtung zum Befestigen ein
- OTI (D1) Vorrichtung zum Befestigen einer CCD-Platte an einer festen Stelle und innerhalb eines Bewegungsbereichs
- PA (D1) HEWLETT PACKARD CO (US)
- IN (D1) DEL ROSARIO JOSEPHINE (US); SCHMELING DAVID J (US); DIEL
  MARK (US); MOVAGHAR ABDOLREZA (US)
- IC (D1) H04N-001/03
- PN2 DE69717362 T2 20030618 [DE69717362]
- STG2- (T2) Trans. Of EP patent
- OTI2- (T2) Vorrichtung zum Befestigen einer CCD-Platte an einer festen Stelle und innerhalb eines Bewegungsbereichs
- PA2 (T2) HEWLETT PACKARD CO (US)
- IN2 (T2) DEL ROSARIO JOSEPHINE (US); SCHMELING DAVID J (US); DIEL MARK (US); MOVAGHAR ABDOLREZA (US)
- IC2 (T2) H04N-001/03
- **AP** DE69717362 19970813 [1997DE-6017362] **PR** - US70161996 19960822 [1996US-0701619]
- **UP** 2003-02
- 3 / 6 PLUSPAT @QUESTEL-ORBIT image
- PN EP0825757 A2 19980225 [EP-825757]
- STG (A2) Pub. Of applic. Without search report
- TI (A2) Apparatus for securing CCD board at a fixed position within a range of motion
- OTI (A2) Vorrichtung zum Befestigen einer CCD-Platte an einer festen Stelle und innerhalb eines Bewegungsbereichs (A2) Appareil pour la fixation d'une carte CCD dans une position fixe et à l'intérieur d'un champ de mouvement
- PA (A2) HEWLETT PACKARD CO (US)
- IN (A2) DEL ROSARIO JOSEPHINE (US); SCHMELING DAVID J (US); DIEL
  MARK (US); MOVAGHAR ABDOLREZA (US)
- IC (A2) H04N-001/03
- **PN2** EP0825757 A3 19991208 [EP-825757]
- STG2- (A3) Publi. Of search report
- TI2 (A3) Apparatus for securing CCD board at a fixed position within a range of motion
- OTI2- (A3) Vorrichtung zum Befestigen einer CCD-Platte an einer festen Stelle und innerhalb eines Bewegungsbereichs
  - (A3) Appareil pour la fixation d'une carte CCD dans une position fixe et à l'intérieur d'un champ de mouvement
- PA2 (A3) HEWLETT PACKARD CO (US)
- IN2 (A3) DEL ROSARIO JOSEPHINE (US); SCHMELING DAVID J (US); DIEL
  MARK (US); MOVAGHAR ABDOLREZA (US)
- IC2 (A3) H04N-001/03
- **PN3** EP0825757 B1 20021127 [EP-825757]
- STG3- (B1) Patent
- ${f TI3}$  (B1) Apparatus for securing CCD board at a fixed position within a range of motion
- OTI3- (B1) Vorrichtung zum Befestigen einer CCD-Platte an einer festen Stelle und innerhalb eines Bewegungsbereichs
  - (B1) Appareil pour la fixation d'une carte CCD dans une position fixe et à l'intérieur d'un champ de mouvement
- PA3 (B1) HEWLETT PACKARD CO (US)
- IN3 (B1) DEL ROSARIO JOSEPHINE (US); SCHMELING DAVID J (US); DIEL
  MARK (US); MOVAGHAR ABDOLREZA (US)
- IC3 (B1) H04N-001/03
- LA ENGLISH (ENG)
- AP EP97306160 19970813 [1997EP-0306160]
- PR US70161996 19960822 [1996US-0701619]
- EC H04N-001/03

DS - DE FR GB
DT - Basic

1 / 1 LEGALI - ©EPO

PN - EP0825757 A2 19980225 [EP-825757]EP0825757 A3 19991208

[EP-825757]EP0825757 B1 20021127 [EP-825757]

AP - EP97306160 19970813 [1997EP-0306160]

**ACTE-** 19980225 EP/AK-A [+]

DESIGNATED CONTRACTING STATES:

DE FR GB

19991208 EP/AK-A [+]

DESIGNATED CONTRACTING STATES:

AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

20000419 EP/17P-A [+]

REQUEST FOR EXAMINATION FILED

EFFECTIVE DATE: 20000218

20000816 EP/AKX-A [+]

PAYMENT OF DESIGNATION FEES

DE FR GB

20010328 EP/RAP1-A

APPLICANT REASSIGNMENT (CORRECTION)

OWNER: HEWLETT-PACKARD COMPANY, A DELAWARE CORPORATION

20020619 EP/17Q-A [+]

FIRST EXAMINATION REPORT

EFFECTIVE DATE: 20020510

20021127 EP/REG-A; GB/FG4D [+]

GB: EUROPEAN PATENT GRANTED

<GB>

20021127 EP/AK-A [+]

DESIGNATED CONTRACTING STATES:

DE FR GB

20030109 EP/REF-A

CORRESPONDS TO:

(DE 69717362 20030109 [DE69717362])

20030704 EP/ET-A [+]

FR: TRANSLATION FILED

20031119 EP/26N-A [+]

NO OPPOSITION FILED

EFFECTIVE DATE: 20030828

**UP** - 2003-47

4 / 6 PLUSPAT - @QUESTEL-ORBIT - image

**PN** - JP10126592 A 19980515 [JP10126592]

STG - (A) Doc. Laid open to publ. Inspec.

TI - (A) CHARGE COUPLING DEVICE FIXING DEVICE

PA - (A) HEWLETT PACKARD CO

PAO - (A) HEWLETT PACKARD CO <HP>

IN - (A) MOVAGHAR ABDOLREZA; DEL ROSARIO JOSEPHINE; DIEL MARK;

SCHMELING DAVID J

IC - (A) H04N-001/028 H04N-001/19

AP - JP20270097 19970729 [1997JP-0202700] PR - US70161996 19960822 [1996US-0701619]

5 / 6 PLUSPAT - @QUESTEL-ORBIT - image

**PN** - US5736738 A 19980407 [US5736738]

STG - (A) United States patent
TI - (A) Apparatus for securing CCD board at a fixed position within a range of motion

PA -(A) HEWLETT PACKARD CO (US)

PA0 -

Hewlett-Packard Company, Palo Alto CA [US]
(A) MOVAGHAR ABDOLREZA (US); DEL ROSARIO JOSEPHINE (US); DIEL IN -MARK (US); SCHMELING DAVID J (US)

IC -(A) A47G-029/02 E04G-003/08 E06B-007/28 - AP - US70161996 19960822 [1996US-0701619] PR - US70161996 19960822 [1996US-0701619]

EC - H04N-001/03

PCL - ORIGINAL (0): 250239000; CROSS-REFERENCE (X): 250234000 250504000R

DT - Corresponding document

1 / 1 LEGALI - ©EPO

US5736738 A 19980407 [US5736738] PN -

US70161996 19960822 [1996US-0701619]

ACTE-19961115 US/AS02-A

ASSIGNMENT OF ASSIGNOR'S INTEREST

OWNER: HEWLETT-PACKARD COMPANY 3000 HANOVER STREET, LEGAL;

EFFECTIVE DATE: 19960820

19961115 US/AS02-A

ASSIGNMENT OF ASSIGNOR'S INTEREST

OWNER: MOVAGHAR, ABDOLREZA; EFFECTIVE DATE: 19960820

19961115 US/AS02-A

ASSIGNMENT OF ASSIGNOR'S INTEREST

OWNER: DEL ROSARIO, JOSEPHINE; EFFECTIVE DATE: 19960820

19961115 US/AS02-A

ASSIGNMENT OF ASSIGNOR'S INTEREST

OWNER: DIEL, MARK; EFFECTIVE DATE: 19960820

19961115 US/AS02-A

ASSIGNMENT OF ASSIGNOR'S INTEREST

OWNER: SCHMELING, DAVID J.; EFFECTIVE DATE: 19960820

19980804 US/AS99-A

OTHER ASSIGNMENTS

SILICON VALLEY BANK 3003 TASMAN DRIVE SANTA CLARA, CALIFORNIA 95054 \* STORM TECHNOLOGY, INC. : 19980713 OTHER CASES: NONE; AMENDMENT TO COLLATERAL ASSIGNMENT, PATENT MORTGAGE AND SECU

19980915 US/CC-A

CERTIFICATE OF CORRECTION

UP -2003-22

6 / 6 PLUSPAT - @QUESTEL-ORBIT - image

US5998786 A 19991207 [US5998786]

(A) United States patent

TI - (A) Apparatus for securing CCD board at a fixed position within a range of motion

(A) HEWLETT PACKARD CO (US) PA -

PA0 -Hewlett-Packard Company, Palo Alto CA [US]

IN -(A) MOVAGHAR ABDOLREZA (US); DEL ROSARIO JOSEPHINE (US); DIEL MARK (US); SCHMELING DAVID J (US)

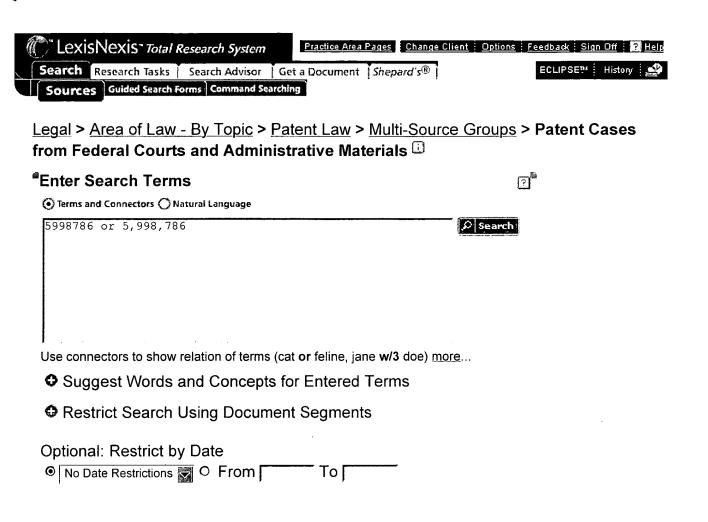
(A) A47G-029/02 E04G-003/08 E06B-007/28 IC -

AP - US952698 19980120 [1998US-0009526] PR - US952698 19980120 [1998US-0009526] US70161996 19960822 [1996US-0701619]

ORIGINAL (O): 250239000; CROSS-REFERENCE (X): 250234000

250504000R

DT - Basic



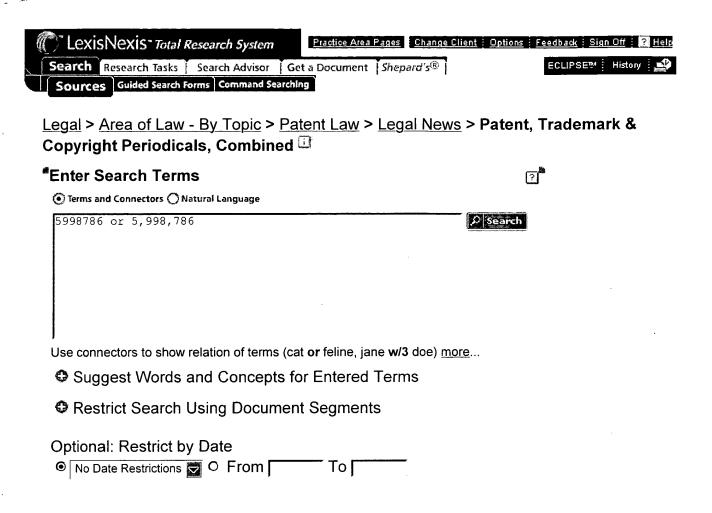
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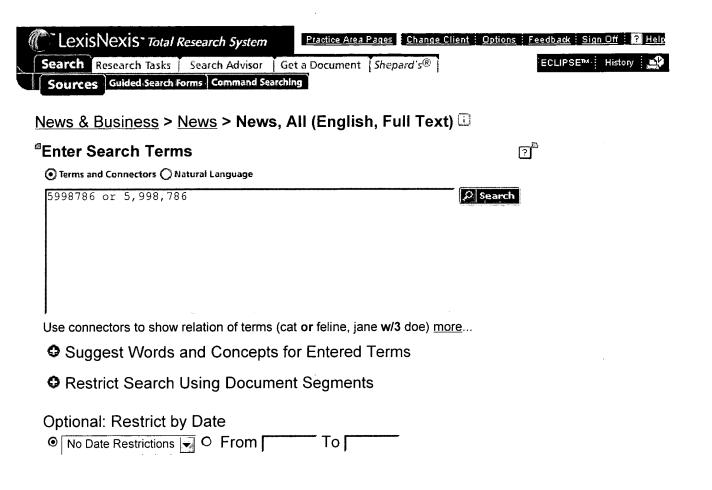
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